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ARE THE RIGHT AND THE LEFT EYES OF AN INDIVIDUUM PARTICULARLY SIMILAR? PACHYMETRIC EXAMINATION OF ENUCLEATED PIG EYES.

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Purpose: Referencing the second eye of an individuum is a common method. To evaluate the similarity of pairs of swine corneas we examined corneal swelling after storage in a moist chamber, aqua bidest and after excimer laser photoablation.
Material and methods: A total of 50 pairs of pig eyes was examined by means of ultrasound pachymetry (Pach-Pen, Mentor and DGH-Pachette 500, Technomed). The corneal thickness was determined immediately after enucleation and after 1) storage in a moist chamber; 2) storage in aqua bidest; 3) photoablation with the excimer-laser.
Results: The swelling of different corneas underlied high fluctuations, whereas the differences between the right and left eye in one individuum were very little. The average corneal swelling after six hours storage in a moist chamber was 170 µm with a standard deviation of 26 µm. On the other hand, the average difference in corneal swelling between the right and left eyes was only 10 µm. The correlation coefficient of corneal swelling between the right and the left eye was 0,83. Similar results were found for storage in aqua bidest and after excimer-laser ablation. It could be shown, that the time course of corneal swelling varied in a wide range: some eyes showed intense swelling very early, whereas in other eyes this increase developed later. Pairs of corneas, however, showed a nearly identical behaviour.
Conclusion: Referencing pairs of eyes is performed frequently, because a similar pattern of biological and biochemical processes is assumed. Our results could prove the similarity concerning the corneal swelling quantitatively. Using this method, less individuals are necessary for statistical analysis.

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ULTRASOUND-ANGIOGRAPHY: A NEW TECHNIQUE COMPARED WITH DUPLEX SONOGRAPHY IN ORBITAL ARTERIES

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Purpose: To compare blood flow velocities in orbital arteries measured with both conventional Color-Duplex (Acuson 128; 7,5 MHz) and Duplex-Sonography additionally equipped with Ultrasoundangio (Diasonics, VST Masters 6607, 5-10 MHz) and to evaluate their reproducibility.
Methods: A healthy test person underwent repeated examinations with each device by a well trained radiologist. Readings of blood flow velocities and their variances were statistically analyzed (Mann-Whitney-U-Test, Test for Homogeneity of Variances).
Results: The observed peak systolic velocities in the ophthalmic artery obtained by Diasonics' duplex-sonography were significantly higher ($p<0.001$), the resistive index was 77,94 % vs. 73,81 % with Acuson 128. Measurements in the retinal artery yielded also significant differences. Flow readings of the ophthalmic artery showed superior precision in Color Duplex additionally equipped with Ultrasoundangio (SD 11,36 cm/s vs. 5,60 cm/s; $p<0,001$). The angio technique revealed a more sensitive imaging of orbital blood flow, especially in parts of the orbita where lower velocities are exspected.
Discussion: The observed differences may be due to the new technique of finding the vessels by detecting the amplitude of the signal and hence, the display may be free of angle and direction dependence as well as aliasing effects.

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ANATOMIC VARIATIONS OF THE EXTRA- AND INTRAORBITAL PART OF THE OPHTHALMIC ARTERY

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Purpose: Investigating the variations and the specialities of the surgical anatomy of the extra- and intraorbital part of the ophthalmic artery (OA).
Methods: An OA was studied morphometrically on 65 block specimens cuted by cadaveric cranial bases.
Results: The OA's length was measured from the place it starts-supraclinoid part of ICA(C1) up to the separation of its first branch in the orbit. An OA is divided into three segments: 1.Extracanalicular 2.Intracanalicular 3. Intraorbital.
The extraorbital (1+2) length of OA in left is 6,04 +/- 0,36 mm and 5,94 +/- 0,22 mm in right. The intraorbital length in left is 6,29 +/- 0,26 mm and 6,33 +/- 0,20 mm in right.
In 47 cases the OA had its origin from the supramedial surface of the anterior knee of ICA siphon and in 16 cases from the middle of its anterior surface. Only in two cases the OA goes out of the infralateral surface of the anterior knee of the ICA.
In 54 cases the OA enters the optic canal accompanying the optic nerve in medial crosses it below and leaves in lateral. In 9 cases the OA passes the whole length of the canal in medial to the nerve and only in two cases is found on its supramedial surface.
Conclusion: The clinical importance of this study for the surgery of the carotid-ophthalmic aneurysms, extra- and intraorbital tumors, some therapeutic and diagnostic procedures is discussed.

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ANATOMICAL STUDY OF THE RAMIFICATIONS OF THE SUPRAORBITALIS NERVE AFTER SUPRAORBITAL NOTCHES

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Ramifications of the supraorbitalis nerve have never been described previoulsy at our knowledge. These ramifications are exposed to injury in oculoplastic surgery with implication of the eyebrow (blepharospasm, frontalis sling procedures, eyebrow fixation...).

20 fresh heads were dissected in cadaver after intravascular opacification with a coronal approach. Supraorbitalis foramen and notches were especially studied, as well as the different ramifications of the supraorbitalis nerve in the frontalis muscle and in the corrugator supercilii.

Various anatomical dispositions can be distingueshed and it appears that it is difficult to really spare the little nervous branches. Thus we emphasize to precise the position of the notche by aid of palpation during surgery.